CONGRESSIONAL BUDGET OFFICE
U.S. Congress
Washington, DC 20515

Peter R. Orszag, Director

June 17, 2008

Honorable Jeff Bingaman
Chairman
Committee on Energy and Natural Resources
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

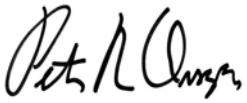
Global climate change poses one of the most significant long-term policy challenges for the nation. Reducing greenhouse-gas emissions would be beneficial in limiting the degree of damage associated with climate change, especially the risk of significant damage. However, decreasing those emissions would also impose costs on the economy—in the case of carbon dioxide (CO_2), because much economic activity is based on fossil fuels, which release that gas when burned.

Under a cap-and-trade program for CO_2 emissions, the government would set gradually tightening limits on emissions, issue rights (or allowances) corresponding to those limits, and then allow firms to trade the allowances among themselves. The net financial impact of such a program on low- and moderate-income households would depend in large part on how the value of emission allowances was allocated. By itself, a cap-and-trade program would lead to higher prices for energy and energy-intensive goods. Those price increases would impose a larger burden, relative to either income or household consumption, on low- and moderate-income households than on higher-income households. Lawmakers could choose to offset the price increases experienced by low- and moderate-income households by providing for the sale of some or all of the CO_2 emission allowances and using the revenues to compensate such households.

In response to your letter of June 4, 2008, the Congressional Budget Office (CBO) has prepared the attached analysis of options for offsetting the economic impact on low- and moderate-income households of a cap-and-trade program for CO_2 emissions. As you requested, the analysis also explores the use of tax incentives for households that invest in energy-saving technologies. The analysis presented here is qualitative in nature; CBO will provide a more detailed analysis when it releases an update, which you have also requested, to its 2000 study of the distributional effects of a cap-and trade program. In keeping with CBO's mandate to provide objective, impartial analysis, the analysis includes no recommendations.

CBO would be pleased to address any further questions you have. I can be reached at (202) 226-2700. The staff contacts for the analysis are Terry Dinan in the Microeconomic Studies Division, who can be reached at (202) 226-2927, and Frank Sammartino in the Tax Analysis Division, who can be reached at (202) 226-2688.

Sincerely,



Peter R. Orszag
Director

Attachment

cc: Honorable Pete V. Domenici
Ranking Member

Honorable Barbara Boxer
Chairman
Senate Committee on Environment and Public Works

Honorable James M. Inhofe
Ranking Member
Senate Committee on Environment and Public Works

Options for Offsetting the Economic Impact on Low- and Moderate-Income Households of a Cap-and-Trade Program for Carbon Dioxide Emissions

Global climate change is one of the nation's most significant long-term policy challenges. Reducing greenhouse-gas emissions would be beneficial in limiting the degree of damage associated with climate change, especially the risk of significant damage. However, decreasing those emissions would also impose costs on the economy—in the case of carbon dioxide (CO_2), because much economic activity is based on fossil fuels, which contain carbon and, when burned, release it in the form of that gas.

A cap-and-trade program for CO_2 emissions is an incentive-based approach for regulating the quantity of emissions. Under such a program, policymakers would set a limit (the cap) on total emissions during some period and would require regulated entities to hold rights, or allowances, to the emissions permitted under that cap. After allowances were initially distributed, entities would be free to buy and sell them (the trade part of the program). Reducing emissions to the level required by the cap would be accomplished mainly by stemming demand for carbon-based energy by increasing its price. The size of the required price increase would depend on the extent to which emissions had to be reduced—larger reductions would require larger price increases to reduce demand sufficiently. Under a cap-and-trade program, a key decision for policymakers is whether to sell emission allowances or to give them away. The net financial impact of such a program for CO_2 emissions on low- and moderate-income households would depend in large part on how the allowances were allocated and how any proceeds from selling them were used.

By itself, a cap-and-trade program for CO_2 emissions would lead to higher prices for energy and energy-intensive goods. Except in limited circumstances (for electricity in states with price regulation, for instance), such price increases would occur regardless of whether the government sold the allowances or gave them away. Those price increases are essential to the success of a cap-and-trade program because they would be the most important mechanism through which businesses and households were encouraged to make economically motivated consumption and investment changes that reduced CO_2 emissions.

Because energy is an input for almost all goods and services, the price of most items would rise in response to the imposition of a cap-and-trade program. Prices of energy-intensive items such as electricity, natural gas, home heating fuels, and gasoline would increase the most.

Those price increases would impose a larger burden, relative to either income or household consumption, on low- and moderate-income households than on higher-income households. High-income households typically spend more in

absolute dollars on energy-intensive items than other households do. As a share of total household income, however, spending by low-income households on those items is more than five times that by high-income households (see Table 1). The pass-through of higher energy prices to other items would also disproportionately affect low- and moderate-income households because those items account for a larger fraction of their total income than they do for high-income households.

Lawmakers could choose to offset the price increases experienced by low- and moderate-income households by providing for the sale of some or all of the CO_2 emission allowances and using a portion of the revenues to compensate such households. For example, the Congressional Budget Office (CBO) found that lower-income households could be financially better off as a result of a cap-and-trade program (compared with no program—and without consideration of any benefit in terms of reduced risk of damage from climate change) if the government chose to sell the allowances and used the revenues to pay an equal lump-sum rebate to each household in the United States. In that case, the size of the rebate would be larger than the average increase in low-income households' spending on energy-intensive goods. High-income households would be worse off (again, with any benefit from reducing the risks associated with climate change excluded) under that scenario because their average increase in spending would be larger than the rebate.

Lawmakers could also choose to use some of the revenues from selling emission allowances to offset the economic effects of higher energy prices by reducing existing taxes. One motivation for this approach is that the price increases caused by a cap-and-trade program would have adverse economic effects similar to those of taxes. For example, taxes on earnings can discourage entry into the labor force or additional hours of work. Higher energy costs would act as an additional tax on earnings (by raising the price of the goods and services that households purchase with their earnings) layered on top of existing taxes. Consequently, using a share of the auction revenues to lower income and payroll tax rates could reduce the near-term cost that a cap-and-trade program would impose on the economy.

Choosing among options for using revenues from the sale of allowances could involve a trade-off between providing targeted assistance to low- and moderate-income households and offsetting some of the adverse effects on economic activity caused by the price increases. For example, using some of the auction proceeds for an equal lump-sum rebate paid to every household in the United States (set at an amount equal to the increase in energy costs for the average household) could actually more than offset the average increase in spending on energy-intensive goods by low-income households; however, a lump-sum rebate would not lower existing tax rates and thus would not offset any of the adverse effects that higher energy prices had on incentives to work. In contrast, using a portion of the auction proceeds to reduce corporate income tax rates could offset a

Table 1. Average Annual Household Expenditures on Energy-Intensive Items, by Income Quintile, 2006

(Dollars)	Quintiles					All
	1	2	3	4	5	Households
Total Utility Expenditures	1,236	1,614	1,835	2,137	2,741	1,913
Total Gasoline Expenditures	991	1,624	2,182	2,829	3,508	2,227
Total Spending on Energy-Intensive Items	2,227	3,238	4,017	4,966	6,249	4,140
Spending on Energy-Intensive Items as a Percentage of Income	22.3	12.1	8.9	7.0	4.2	6.8

Source: Bureau of Labor Statistics, Consumer Expenditure Survey, 2006, available at www.bls.gov/cex/2006/Standard/quintile.pdf.

Note: Energy-intensive items include natural gas, electricity, fuel oil, other fuels, gasoline, and motor oil.

substantial share of the additional adverse economic incentives, but it would relieve only a small portion of the increase in energy costs experienced by low-income households.

Policies can be designed to achieve a mixture of outcomes. For example, lowering payroll tax rates on a portion of earnings or reducing the rate at which the earned income tax credit (EITC) phases out would target more relief to lower-income families than would a reduction in corporate tax rates, while offsetting some of the adverse economic effects of the program.

An important consideration in using revenues to provide assistance to households would be to do so in a way that did not incur significant new administrative or compliance costs. Using existing transfer programs or providing rebates through the income tax system would avoid creating new institutional structures for administering payments. Existing systems that already collect information on household income also are well suited to targeting assistance based on need. No single existing system would reach all households, however. Not everyone—especially members of low-income households and retirees—pays payroll taxes or files an income tax return. But people would need to file a return to participate in a rebate program based on the income tax system. The response to the recent stimulus rebates suggest that such an approach can work, but it is too early to tell if a significant fraction of households that otherwise are not required to file an income tax return will file to claim the rebate.

Delivering rebates through a combination of the income tax system and existing transfer programs in theory would do a better job of reaching affected households than would relying on either approach by itself and would not require a new program. It is not easy in practice, however, to coordinate among existing programs to avoid overlap and ensure that economically equivalent households receive roughly the same benefit.

Reductions in Income Tax Rates

Reductions in individual or corporate income tax rates would be straightforward to administer and would provide the largest benefits in terms of economic efficiency but would score low in their ability to offset energy price increases for low- and moderate-income households. Reductions in individual income tax rates would enable taxpayers to reduce the amount of taxes withheld from their paychecks to cover the cost of additional expenditures on energy-intensive items as they occurred throughout the year.

A proportional reduction in all individual income tax rates would provide the largest percentage increase in after-tax income and the largest dollar tax reductions for taxpayers in the highest income tax brackets, while providing minimal benefits to taxpayers who were in the 10 percent or 15 percent marginal tax brackets, who constitute roughly two-thirds of taxpayers with taxable income. Limiting the rate reductions to only the two lowest income tax brackets would provide a larger share of the tax benefits to taxpayers in those brackets, but taxpayers whose income put them near the top of the 15 percent bracket ($83,000 for a couple and $41,450 for a single taxpayer in 2008) would benefit the most. Reductions in income tax rates would not directly help low-income households that did not have sufficient income to owe income taxes.

A reduction in corporate income tax rates would benefit owners of corporate stock in the short run, with most of the benefits going to higher-income households. As capital markets adjusted over the longer term, however, the economic gain from reducing the tax would spread across all types of capital. And over time, at least some of the economic gains could also be shifted to wage earners, although the degree of such shifting is uncertain. Nevertheless, any gains by low- and moderate-income households from a reduction in corporate taxes would be modest even over the longer term and insufficient to offset their increased energy costs.

Payroll Tax Rebates

A payroll tax rebate would reach the approximately 165 million workers who are covered under the Social Security and Medicare programs. Economist Gilbert Metcalf of Tufts University has proposed a payroll tax rebate for Social Security and Medicare taxes as an offset to a carbon dioxide tax.[1] Under that proposal, the rebate would apply to the tax on the first $3,660 of earnings. With a combined

1. Gilbert E. Metcalf, "A Green Employment Tax Swap: Using a Carbon Tax to Finance Payroll Tax Relief," Brookings Institution and World Resources Institute, Washington, D.C. (June 2007).

employee and employer tax rate of 15.3 percent, the maximum energy credit per worker would be $560.[2]

Households without covered earnings would not benefit from a payroll tax rebate. Many of those are low-income households and retirees. Data from the Current Population Survey, produced by the Bureau of the Census, indicate that although about 80 percent of all households would be eligible for a payroll tax rebate, only slightly more than half (54 percent) of the households in the lowest fifth of the income distribution would qualify. About three-quarters of the households in that quintile that would not qualify for a payroll tax rebate receive Social Security benefits and thus would be partially protected from higher energy costs by cost-of-living adjustments. Among those who qualified, some would receive less than a full $560 rebate if their earnings were less than $3,660.

Administering a payroll tax rebate would raise a number of issues. Adjusting payroll tax withholding would impose some administrative burden on employers, who also would lack the necessary information to adjust withholding for workers with more than one job. Rather than adjusting withholding, a payroll tax rebate could be paid through the income tax system when workers filed their returns. Although that approach would be easier to administer, the timing of the rebate would not coincide with the timing of individuals' increased expenditures. Also, because some workers who pay payroll taxes do not currently file income tax returns, some additional administrative costs would be incurred to process more returns.

A payroll tax rebate would be progressive over most of the income distribution, providing benefits that were a larger percentage of income for lower-income households except for the very lowest income households with little or no earnings. (The rebate would not necessarily be equal for households with the same income, as the rebate amount would depend upon the number of workers within each household.)

A payroll tax rebate would provide modest incentives for increased participation in the labor force by increasing workers' take-home pay. It would not offer new work incentives for people already in the labor force with earnings high enough to qualify for the maximum rebate.

Income Tax Rebates

The Internal Revenue Service (IRS) has experience, most recently with the 2008 stimulus payments, in delivering rebates based on information in income tax returns. When filing, households could claim a rebate as a credit against their income tax liability. That transaction would present the same timing issues

2. A payroll tax rebate would not have to affect the financial status of Social Security and Medicare or the future retirement benefits of workers. Workers would be credited with their full covered earnings, and the Social Security and Medicare trust funds could be credited for the full amount of the payroll tax.

described in the preceding section. Unless the rebates were refundable (that is, payable in excess of the amount of income tax owed), they would be of little or no value to taxpayers who filed income tax returns but owed no income tax—which was the case for approximately 45 million of the 138 million returns filed in 2006. Moreover, as seen in the experience with stimulus payments, the IRS would need to undertake substantial educational efforts, and many wage earners and others who otherwise would not file income tax returns (because their income falls below the statutory requirements for filing) would need to file a return to obtain the rebate. In 2006, for example, approximately 20 million households did not file a return, though that figure is uncertain. Households with very low income and households headed by elderly people account for most of those that do not file a return.

Recent experience is not very encouraging regarding the participation of new filers in modest rebate programs. Only about 6 percent of the estimated 22 million potential new filers submitted a return to claim the federal telephone excise tax rebate in 2007, though the small rebate amount—ranging from $30 to $60—may have been a factor for those choosing not to file. The economic stimulus rebates that are available this year to households that do not normally file a tax return will provide some indication of the percentage of eligible households that are likely to file an income tax return in order to claim a larger rebate.

A refundable tax rebate of a fixed dollar amount would be progressive, providing greater relief as a percentage of income to low-income households. Rebates can be adjusted for differences in family size. They can also be targeted to lower-income taxpayers by reducing (phasing out) the amount of the credit at higher incomes. For example, the individual income tax rebates that were part of the economic stimulus package enacted this year were reduced by 5 percent of income in excess of $75,000 for individuals and $150,000 for couples. Phasing out a rebate reduces its budgetary cost but adds complexity to the calculation of tax liability and makes the true tax on additional income (the marginal tax rate) less transparent.

An issue is whether the rebates would be paid to all households or only those that met certain income requirements. The recent economic stimulus rebates were payable to households without income tax liability if their combined income from earnings, Social Security, and veterans' disability payments was at least $3,000. Allowing all households to claim a refundable income tax rebate would increase administrative costs and raise compliance issues.

A fixed rebate that did not depend on earnings would not provide households with any additional incentives to work or save and thus would not offset any of the economic costs associated with a cap-and-trade program.

Increased EITC Payments

An option based on the current tax system but more targeted to low-income households would be to expand the earned income tax credit. The EITC is a refundable credit (households receive a payment if the credit exceeds their income tax liability), payable to low-income families with earnings. In 2007, single parents with one child and income up to $33,241 ($35,241 for a married couple) were eligible for the credit. Single parents with two or more children could qualify with income up to $37,783 ($39,783 for a married couple). Childless workers between the ages of 25 and 65 are eligible for a much smaller credit but must have income less than $15,000 to qualify.

In 2006, taxpayers filed for the earned income tax credit on 23.4 million tax returns. The total amount of the credit was $45.4 billion, of which $39.9 billion (88 percent) was refundable. About half of the total EITC payments went to families with income under $15,000.[3]

Increasing EITC payments would be straightforward for the IRS to administer. If the increase was proportional to the existing credit, most of the benefits would go to low-income families with children and very little to childless workers. Increasing the EITC would not provide any benefits to households without earnings, however.

Increasing EITC payments would have some positive economic effects. Studies have found that increases in that tax credit have had a positive effect on the participation of low-income single women in the labor force.[4] Though increasing the EITC would raise marginal tax rates for some workers, that characteristic of the existing EITC appears to have little adverse effect (in particular, on the number of hours worked by people already working).

Automatic Increases in Social Security and Supplemental Security Income Benefits

Households receiving Social Security benefits and benefits from the Supplemental Security Income (SSI) program would be partially protected from higher energy costs because those benefits are automatically increased each year to reflect increases in consumer prices. Therefore, considered in combination with automatic increases in Social Security benefits and SSI, options such as a payroll tax rebate that are limited to households with earnings can reach a large portion of the low- and moderate-income population. Data from the Current Population

3. Brian Balkovic, "Individual Income Tax Returns, Preliminary Data, 2006," *Statistics of Income Bulletin* (Internal Revenue Service, Spring 2008).

4. See Bruce D. Meyer, "The U.S. Earned Income Tax Credit, Its Effects, and Possible Reforms," Harris School of Public Policy Studies, University of Chicago and National Bureau of Economic Research (August 2007); and Nada Eissa and Hilary Hoynes, "Behavioral Responses to Taxes: Lessons from the EITC and Labor Supply," in James M. Poterba, ed., *Tax Policy and the Economy*, vol. 20 (Cambridge, Mass.: MIT Press, 2006), pp. 163–192.

Survey indicate that about 95 percent of households would qualify for a payroll tax rebate or an automatic cost-of-living increase in Social Security benefits, including 85 percent to 90 percent of households in the lowest income quintile. Cost-of-living increases for Social Security and SSI would only partially protect households receiving those benefits, however, because income from those sources covers only part of their total expenditures. That effect would be exacerbated because expenditures on energy-intensive items are a higher share of total expenditures for the elderly (see Table 2).

Supplement to Food Stamp Benefits

An energy credit based on the same eligibility rules as those that exist for the Food Stamp program would be a way to target benefits to low-income households. To be eligible for food stamps, an applicant's monthly income must be at or below 130 percent of the federal poverty guideline ($2,238 for a family of four) and countable assets must be less than $2,000 ($3,000 for households with elderly and disabled members). Approximately 27 million people receive Food Stamp benefits each month. About 65 percent of eligible people participate in the program, and nearly 90 percent of eligible children do.[5]

An energy credit could be distributed to households through the same system as food stamps, which are paid through an electronic benefit transfer (EBT) system. Benefits are deposited electronically in individual accounts each month, and food stamp recipients use a card to debit their account when paying for groceries.

An energy supplement to Food Stamp benefits would not affect work or savings incentives at the margin and thus would not offset any of the economic efficiency costs of higher energy prices.

Increased Funding for the Low Income Home Energy Assistance Program

Increases in funding for the Low Income Home Energy Assistance Program (LIHEAP) could supplement other options for offsetting higher energy costs but by themselves would not be an effective way to help the majority of low- and moderate-income households. Federal rules restrict LIHEAP assistance to households with income up to 150 percent of the federal poverty guideline (or 60 percent of state median income if greater). States, however, can choose to set lower income limits, and as a result, eligibility requirements vary from state to state. In 2005, an estimated 5.3 million households received assistance through LIHEAP, 15 percent of federally eligible households.

5. Kari Wolkwitz, "Trends in Food Stamp Program Participation Rates: 1999–2005" (U.S. Department of Agriculture, Food and Nutrition Service, June 2007).

Table 2. Average Annual Household Expenditures on Energy-Intensive Items, by Age, 2006

(Dollars)

	All Households	Under Age 65	Age 65 and Over
Total Utility Expenditures	1,913	1,931	1,837
Total Gasoline Expenditures	2,227	2,436	1,359
Total Spending on Energy-Intensive Items	4,140	4,367	3,196
Spending on Energy-Intensive Items as a Percentage of Income	6.8	6.6	8.4
Spending on Energy-Intensive Items as a Percentage of Total Spending	8.6	8.5	9.1

Source: Bureau of Labor Statistics, Consumer Expenditure Survey, 2006, available at www.bls.gov/cex/2006/Standard/sage.pdf.

Note: Energy-intensive items include natural gas, electricity, fuel oil, other fuels, gasoline, and motor oil.

Providing assistance to all low- and moderate-income households would require a massive expansion of the program, a substantial increase in administrative costs, and possibly a major overhaul of the program. The current program is funded as a block grant from the federal government to the states and other entities, leaving wide latitude in the types of assistance provided. Increasing LIHEAP subsidies would not offset any of the economic efficiency costs of higher energy prices.

Increased Incentives for Energy-Saving Investments by Households

The increase in energy prices that would result from a cap-and-trade program would encourage businesses and households to adjust their energy usage. Using revenues from auctioning allowances to subsidize household investments that reduced carbon dioxide emissions would lower the cost to households of adapting to higher energy prices. For example, subsidizing weatherization improvements would enable households to use less energy for heating and cooling.

However, incentives for energy-saving investments in combination with a cap-and-trade program would not reduce CO_2 emissions below the level set by the cap-and-trade program by itself. Although investment incentives could alter the timing of emission reductions by lowering the cost of meeting the targets, the cap set by the program would ultimately determine the total amount of emission reductions each year.

Furthermore, such incentives could increase the total costs (including both public and private costs) of meeting the cap because the incentives would encourage households to choose certain alternatives over others in adjusting to higher energy prices. For example, a tax credit for solar heating would encourage the use of that technology even if it was not the most cost-efficient alternative in the absence of the credit. Creating a tax-incentive system without distorting technology choices is difficult.

A wide variety of deductions and credits related to saving energy already exist at both the federal and state levels. A federal credit (termed the section 45 production tax credit) is available for electricity produced using certain renewable energy sources, including wind, biomass, geothermal energy, solar energy, and others. Other credits are available for the manufacture of energy-saving appliances, the construction of new energy-efficient homes, energy-efficient improvements to existing homes, and purchases of alternative types of motor vehicles.

Incentives aimed at households typically favor expenses related to installing a system relying on renewable energy or reducing the energy required to heat or cool a home. The most common incentives are for installing solar-powered systems (10 states and, from 2006 through 2008, the federal government offer such a tax incentive). Incentives for wind power and biomass systems are also relatively common, and ones for geothermal and hydropowered systems are less so. Three states provide tax incentives to purchase items such as insulation, storm doors and windows, and weather stripping (in 2006 and 2007, the federal government did so as well). Montana and Oregon offer credits for purchases of energy-efficient furnaces, heat pumps, and air conditioners, and Oregon provides rebates for purchases of other home appliances, such as dishwashers, clothes washers, and refrigerators, as long as they meet certain standards for energy savings. California also has a unique incentive: a deduction for interest paid on loans used to purchase qualifying items.

The generosity of the incentives varies widely among states. Some states allow a deduction or credit for only a portion of the qualifying expense. Most cap the deduction or credit at a certain dollar amount or require that it be spread over multiple years. Montana, at one extreme, allows a 100 percent credit up to $500 for installing a system based on renewable energy, while Arizona allows only a 5 percent deduction, up to a maximum deduction of $5,000, for purchasing an exceptionally energy-efficient house. Credits of 25 percent seem to be the most common.

The Oregon program is among the most widely used, with about 39,000 taxpayers (constituting 2.6 percent of returns) claiming a credit in 2005.[6] Historically, three-quarters of Oregon's credits have been for purchases of energy-efficient heating and cooling systems or home appliances. Of the state's credits for installing renewable energy systems, over 80 percent have been for solar systems, but that amounted to only 17,000 systems between 1978 and 2001.[7] A credit for solar systems in California was claimed by around 4,500 taxpayers in 2005, after which

6. See Oregon Department of Energy, "The Oregon Department of Energy Tax Credits" (presentation, April 2006), p. 13, available at www.epa.gov/cleanenergy/documents/4_20_06_OR_Tax_Credits_Dillard.pdf.

7. S. Gouchoe, V. Everette, and R. Haynes, *Case Studies on the Effectiveness of State Financial Incentives for Renewable Energy*, NREL/SR-620-32819 (National Renewable Energy Laboratory, 2002), p. 56, available at www.nrel.gov/docs/fy02osti/32819.pdf.

Table 3. Utilization of Federal Residential Energy Credits, 2006

Adjusted Gross Income	Number of Tax Returns (Thousands)	Percentage of Total	Percentage Claiming Residential Energy Expenses	Average Usable Residential Energy Credit (Dollars)
Under $15,000	37,614	27.2	0.1	111
$15,000 to $30,000	29,649	21.4	1.0	197
$30,000 to $50,000	24,907	18.0	3.2	208
$50,000 to $100,000	30,053	21.7	6.6	223
$100,000 to $200,000	12,110	8.7	8.9	252
$200,000 and Above	4,088	3.0	6.9	305
Total	138,420	100.0	3.2	230

Source: Congressional Budget Office based on Internal Revenue Service, "Individual Income Tax Returns, Preliminary Data, 2006," *Statistics of Income Bulletin* (Spring 2008), Table 1, pp. 6–17.

it expired.[8] North Carolina's 35 percent credit for installing renewable energy systems was claimed by only 263 individual taxpayers in 2007.[9]

Data on the utilization of federal residential energy credits are available for 2006 (see Table 3). Those credits apply to expenses for both energy conservation and renewable energy systems, but the vast majority of qualifying expenses are for the former. Almost 4.5 million taxpayers claimed a credit in 2006 (representing about 3.2 percent of the returns filed in that year). Both participation and average benefits increased with income.

8. State of California, Franchise Tax Board, *Annual Report, 2006,* p. 141, available at www.ftb.ca.gov/aboutftb/annrpt/2006/2006AR.pdf.

9. North Carolina Department of Revenue, "William S. Lee Tax Credits," available at www.dor.state.nc.us/publications/cred_inct/article3band3etc2007.pdf.